



# **AN EXAMINATION OF ASVAB RE-TEST DATA IN THE FLEET**

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# Armed Services Vocational

## Aptitude Battery (ASVAB)

■ DoD instrument, assesses aptitudes in the following areas:

- Verbal Aptitude
- Quantitative Aptitude
- Technical Knowledge
- Perceptual Speed and Accuracy

### ■ Applications

- Primary selection and classification tool for recruit accessions
- Fleet re-testing
  - » Rating conversion
  - » Striking into a rating
  - » Emerging use as a force shaping and career management tool
    - Perform to Serve
    - Sea Warrior

# ASVAB Score Stability



- **Success of re-testing is contingent on the assumption that scores will increase with subsequent test administrations**
- **Testing theory would predict the relative consistency of scores over time**
  - Stability of constructs tested (i.e., math and verbal skills)
  - Good test-retest reliability
- **Fleet re-test scores have not been systematically analyzed**
  - Rationale for score improvement over time
    - » Substantial portion of test is knowledge laden
    - » Cognitive development continues during 20s
- **Navy Selection and Classification Office (N132F) conducted an empirical study to determine whether ASVAB scores significantly increase with fleet re-testing**

# Fleet Re-test Data Analysis



## ■ Fleet re-test data analyzed by N132F

- Data mined from N132
- N = 106 (63 males, 43 females)
- Score differences examined between Test Administration 1 (accessions testing) and Test Administration 2 (fleet re-tests)

# Results: Subtest Score Differences



- **Statistically significant increases found between Test 1 and Test 2 on all subtests ( $p < .01$ )**
  - Average Score increases varied across subtests
    - » Ranged from 1 on Numerical Operations to 8 on Coding Speed among subtests; 15 on AFQT (verbal and math composite)
    - » Increases most notable on AFQT, Coding Speed, and Auto & Shop Information
- **Few differences on re-test results between males and females**
  - Females tended to increase more on General Science than males
  - Female scores declined slightly on Math Knowledge; Male scores increased

# Results: Individual Differences

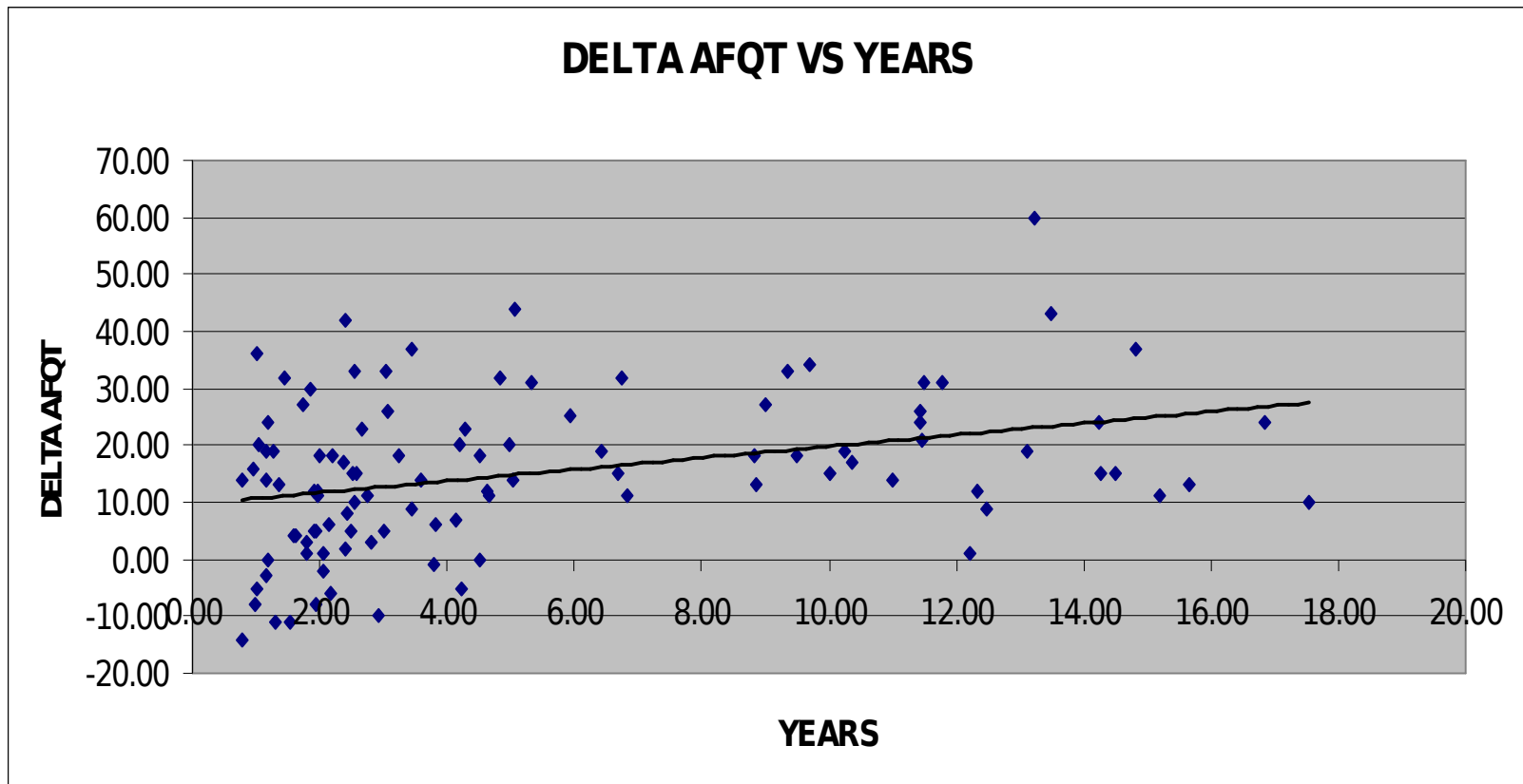


- **Average AFQT score increased 15 points with re-testing**
- **Some individuals increased dramatically with re-testing (i.e., delta AFQT = 60)**
  - **English language proficiency might be a contributing factor**
    - » **Ethnic minority background appeared to be related to substantial score increases**
    - » **Under-developed skills at Test 1**
    - » **Improvement of skills during Navy tenure reflected at Test 2**
  - **Functional skills training data inconclusive**
    - » **Too few Sailors in current sample**
    - » **Large variability in associated re-test scores**

# Results: Score Trends Over Time



- Significant relationship between testing interval and score increases ( $r = .35$ ,  $p < .01$ )
- Regression analyses indicated a general trend of increasing scores over time
  - Magnitude of the increase varied substantially across individuals



# Results: Classification Impact



- **Classification simulations performed using RIDE technology to determine potential impact of fleet re-testing on conversions and force shaping**
  - Qualification rates compared based on scores from Test 1 and Test 2
  - Average Sailor qualified for 75% more jobs based on re-test scores
  - Comparable increases in qualification rates for undermanned ratings
  - Dramatic re-test score increases multiplied Sailor career options



# Conclusions



- **Results indicate that fleet re-testing results in significantly higher ASVAB scores**
  - Contradicts expectations of score consistency
  - Highlights factors that may contribute to score increases (i.e., language skills development)
  - Important implications for Manpower & Personnel planning and strategy
  - Significant potential for individual Sailor career development
- **N132F will continue fleet re-test tracking and analysis**
- **Results will inform policy and support important Navy initiatives**